

## CLAIMS

What is claimed is:

1. A method of maintaining neighbor list information in a wireless communication system, comprising:

maintaining a separate neighbor list for each of a plurality of cells, said neighbor lists indicating neighbor cells and corresponding control channels;

maintaining a central link-list database identifying, for each of said plurality of cells, neighbor cells and corresponding control channels;

receiving a neighbor modification command;

automatically identifying which of said neighbor lists should be modified as affected neighbor lists based on said central link-list database in response to said command;

automatically modifying a plurality of said affected neighbor lists in response to said command; and

modifying said central link-list database in response to said command.

2. The method of claim 1 wherein automatically modifying a plurality of said affected neighbor lists in response to said command comprises automatically deleting at least one control channel from each said affected neighbor list.

3. The method of claim 2 wherein automatically deleting at least one control channel from each said affected neighbor list comprises automatically deleting at least one control channel from a neighbor channel sub-list of each said affected neighbor list..

4. The method of claim 1 wherein automatically modifying a plurality of said affected neighbor lists in response to said command comprises automatically deleting at least one neighbor relation and at least one control channel from each said affected neighbor list.

5. The method of claim 4 wherein automatically deleting at least one neighbor relation and at least one control channel from each said affected neighbor list comprises automatically deleting at least one control channel from a neighbor channel sub-list and automatically deleting at least one neighbor relation from a neighbor cell sub-list of each said affected neighbor list.

6. The method of claim 1 wherein automatically modifying a plurality of said affected neighbor lists in response to said command comprises automatically updating at least one control channel in each said affected neighbor list.

7. The method of claim 6 wherein automatically updating at least one control channel from each said affected neighbor list comprises automatically deleting at least one control channel from a neighbor channel sub-list and automatically adding another control channel to said neighbor channel sub-list of each said affected neighbor list.

8. The method of claim 1 wherein automatically modifying a plurality of said affected neighbor lists in response to said command comprises automatically updating at least one neighbor relation and at least one control channel in each said affected neighbor list.

9. A method of maintaining neighbor list information in a wireless communication system, comprising:

receiving a delete neighbor command identifying a first cell;  
automatically identifying a plurality of neighbor lists that should be modified in response to said command; and  
automatically deleting at least a neighbor relation to said first cell and at least one control channel identifier from a plurality of said identified neighbor lists in response to said command.

10. The method of claim 9 wherein automatically identifying a plurality of neighbor lists that should be modified in response to said command comprises automatically identifying a plurality of neighbor lists that should be modified in response to said command based on a central link-list database that identifies neighbor cells and corresponding control channels for a plurality of cells.

11. The method of claim 9 wherein automatically deleting at least a neighbor relation to said first cell and at least one control channel identifier from a plurality of said identified neighbor lists in response to said command comprises automatically deleting at least one control channel from a neighbor channel sub-list and automatically deleting at least the neighbor relation to said first cell from a neighbor cell sub-list of each said identified neighbor lists.

12. A method of maintaining neighbor list information in a wireless communication system, comprising:

receiving a change neighbor command identifying a first cell;  
automatically identifying a plurality of neighbor lists that should be modified in response to said command; and  
automatically changing a control channel identifier associated with said first cell in a plurality of said identified neighbor lists in response to said command.

13. The method of claim 12 wherein automatically identifying a plurality of neighbor lists that should be modified in response to said command comprises automatically identifying a plurality of neighbor lists that should be modified in response to said command based on a central link-list database that identifies neighbor cells and corresponding control channels for a plurality of cells.

14. The method of claim 12 wherein automatically changing a control channel identifier associated with said first cell in a plurality of said identified neighbor lists in response to said command comprises automatically deleting at least one control channel from a neighbor channel sub-list and automatically adding another control channel to said neighbor channel sub-list of each said identified neighbor lists.

15. A wireless communication system, comprising:

at least one base station controller coupled to a plurality of radio base stations to provide wireless communications to a plurality of cells, each of said cells having at least one neighbor cell and a control channel;

a neighbor list for each of said cells identifying that cell's neighbor cells and their corresponding control channels;

a central link-list database identifying the neighbor cells and corresponding control channels for each of said plurality of cells;

said base station controller operative to receive a neighbor modification command and respond thereto by:

automatically identifying which of said neighbor lists should be modified as affected neighbor lists based on said central link-list database;

automatically modifying a plurality of said affected neighbor lists; and

automatically modifying said central link-list database.

16. The system of claim 15 wherein said neighbor modification command is a delete neighbor command identifying a first cell and wherein said base station controller is operative to respond to said delete neighbor command by:

automatically identifying which of said neighbor lists should be modified as affected neighbor lists based on said central link-list database;

automatically deleting at least a neighbor relation to said first cell and at least one control channel identifier from a plurality of said affected neighbor lists; and

automatically modifying said central link-list database.

17. The system of claim 15 wherein said neighbor modification command is a change neighbor command identifying a first cell and wherein said base station controller is operative to respond to said change neighbor command by:
  - automatically identifying which of said neighbor lists should be modified as affected neighbor lists based on said central link-list database;
  - automatically changing at least one control channel identifier in a plurality of said affected neighbor lists; and
  - automatically modifying said central link-list database.

18. A base station controller coupled to a plurality of radio base stations to provide wireless communications to a plurality of cells, each of the cells having at least one neighbor cell and a control channel, comprising:

    a central link-list database identifying the neighbor cells and corresponding control channels for each of said plurality of cells;

    a separate neighbor list for each of said cells identifying that cell's neighbor cells and their corresponding control channels;

    wherein said base station controller is programmed to respond to a received neighbor modification command by:

        automatically identifying which of said neighbor lists should be modified as affected neighbor lists based on said central link-list database;

        automatically modifying a plurality of said affected neighbor lists; and

        automatically modifying said central link-list database.

19. A computer readable medium comprising a computer readable program embodied therein for a base station controller, the base station controller coupled to a plurality of radio base stations to provide wireless communications to a plurality of cells, each of the cells having at least one neighbor cell and a control channel, said base station controller having access to a separate neighbor list for each of said cells identifying that cell's neighbor cells and their corresponding control channels and access to a central link-list database identifying the neighbor cells and corresponding control channels for each of said plurality of cells, the computer readable program comprising:

computer readable program code that responds to receipt of a neighbor modification command by automatically identifying which of a plurality of the neighbor lists should be modified as affected neighbor lists based on the central link-list database;

computer readable program code that automatically modifies said affected neighbor lists in response to said command; and

computer readable program code that modifies the central link-list database in response to said command.